

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The various embodiments of the present invention are illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which:

[0006] FIG. 1 is a block diagram of a computer system implementing a parallelization compiler to perform pipeline transformation of a sequential application program, in accordance with one embodiment of the invention.

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[0007] FIGS. 2A-2C^{2B} depict pipeline transformation of a sequential network application program, in accordance with one embodiment of the invention.

[0008] FIGS. 3A-3C depict live variable transmission between pipelined stages formed from a sequential packet processing stage, in accordance with one embodiment of the invention.

[0009] FIG. 4 illustrates initial transformation of the sequential PPS loop of FIG. 3A, in accordance with one embodiment of the invention.

[00010] FIGS. 5 illustrates a control flow graph (CFG) formed from a PPS loop body of FIG. 3A, in accordance with one embodiment of the invention.

[00011] FIG. 6 depicts a dependence graph formed from a summary graph of the CFG of FIG. 5, in accordance with one embodiment of the invention.

[00012] FIG. 7 illustrates a control flow model formed from a summary graph of the directed graph of FIG. 6, in accordance with one embodiment of the invention.

[00013] FIG. 8 is a block diagram illustrating a network processor configured to provide a D-stage processor pipeline, in accordance with one embodiment of the invention.

[00014] FIG. 9 is a flowchart illustrating a method for pipeline transformation of a sequential network application, in accordance with one embodiment of the invention.

[00015] FIG. 10 is a block diagram illustrating a flowchart for construction of a flow network model, in accordance with one embodiment of the invention.

[00016] FIG. 11 is a flowchart illustrating a method for constructing a flow network, in accordance with one embodiment of the invention.

[00017] FIG. 12 is a flowchart illustrating a method for constructing a flow network, in accordance with one embodiment of the invention.